IN THE CLAIMS:

1. (Original) A method of diagnostic imaging comprising the steps of:
positioning a subject to be scanned into a scanning bay;
projecting a radiation beam along a beam path toward the subject;
positioning a filter having an attenuation profile in the beam path;
modulating the attenuation profile to define a desired attenuation profile;
acquiring diagnostic data of the subject; and
reconstructing an image of the subject from the diagnostic data.

2. (Original) The method of claim 1 further comprising the step of modulating the attenuation profile to the desired attenuation profile to reduce radiation exposure to one or more regions of the subject.

3. (Original) The method of claim 2 further comprising the step of protecting specific anatomical regions of the subject against substantial radiation exposure.

4. (Original) The method of claim 1 further comprising the step of modulating the attenuation profile to the desired attenuation profile as a function of viewing angle.

5. (Original) The method of claim 1 wherein the filter includes a body having a number of hollow tubes and wherein the step of modulating further includes the step of filling a selected number of the hollow tubes with attenuating material to define the desired attenuation profile.

6. (Original) The method of claim 5 wherein the attenuating material includes liquid attenuator.

7. (Original) The method of claim 1 wherein the filter includes a body having a plurality of removable attenuating rods and wherein the step of modulating further includes the step of positioning a number of the removable attenuating rods in the body to define the desired attenuation profile.

8. (Original) The method of claim 1 wherein the filter includes a flexible bladder having a shape and containing attenuating material and wherein the step of modulating further includes the step of altering the shape of the flexible bladder to define the desired attenuation profile.

9. (Original) The method of claim 8 wherein the step of altering further includes the step of applying pressure to the flexible bladder.

10. (Original) The method of claim 9 wherein the filter includes a solid x-ray transparent base plate supportive of the flexible bladder and an upper plate of flexible x-ray transparent plastic positioned adjacently atop the flexible bladder and wherein the step of applying pressure further includes the step of distorting the upper plate.

11. (Original) The method of claim 10 wherein the step of distorting includes the step of applying force to one or more region of the upper plate with one or more movable rods.

12. (Original) The method of claim 10 wherein the upper plate includes a plurality of parallel slots and wherein the step of distorting includes the step of positioning a number of the parallel slots to either one of apply force to the flexible bladder or reduce force applied to the flexible bladder to define the desired attenuation profile.

13. (Original) The method of claim 1 further comprising the step of modulating the attenuation profile of the filter during the acquiring of diagnostic data.

14. (Original) The method of claim 1 further comprising the step of performing a scout scan to determine a patient attenuation pattern and defining the desired attenuation profile of the filter as a function of the patient attenuation pattern.

15. (Original) A method of acquiring diagnostic data of a subject comprising the steps of:

determining an attenuation pattern for acquiring diagnostic data of a subject to be scanned;

presetting a first filter to a desired attenuation profile;

projecting HF electromagnetic energy toward the subject to acquire diagnostic data of the subject;

during the projecting, translating a second filter having an attenuation profile such that the attenuation profiles of the first filter and the second filter is a function of the attenuation pattern of the subject.

16. (Original) The method of claim 15 wherein the step of determining an attenuation pattern further comprises the step of initiating a scout scan of the subject.

17. (Original) The method of claim 16 wherein the step of presetting the first filter further comprises the step of determining a filter contour that complements the attenuation pattern of the subject.

18. (Original) The method of claim 17 wherein the step of determining the filter contour further comprises the step of accounting for at least one of dose reduction regions of the subject and regions of the subject where increased HF electromagnetic energy is desired.

19. (Original) The method of claim 15 wherein the first filter includes an x axis filter and the second filter includes a z axis filter.

20. (Original) The method of claim 15 wherein the step of translating further comprises the step of moving the second filter synchronically with movement of the subject.

21. (Original) A method of diagnostic imaging comprising the steps:

positioning a subject to be scanned on a table in a scanning bay;

projecting HF electromagnetic energy toward the subject and a detector assembly;

dynamically filtering the HF electromagnetic energy with at least one filter;

acquiring imaging data of the subject;

reconstructing a set of images of the subject from the imaging data;

removing the subject and table from the scanning bay;

projecting HF electromagnetic energy toward the detector assembly and dynamically filtering HF electromagnetic energy with the at least one filter;

acquiring data attributable to the at least one filter;

generating a set of images attributable to the at least one filter; and

recalibrating the at least one filter such that images absent artifacts attributable to the at least one filter are absent from reconstructed images of the subject.

22. (Original) The method of claim 21 further comprising the step of determining a filter calibration sequence and reacquiring imaging data of the subject with the HF electromagnetic energy being filtered by the at least one filter wherein the at least one filter filters HF electromagnetic energy according to the filter calibration sequence.

23. (Original) The method of claim 22 wherein the at least one filter has an attenuation profile and further comprising the step of modulating the attenuation profile during the step of filtering based on the calibration sequence.

24. (Original) The method of claim 21 further comprising the step of reconstructing a final set of images of the subject having the artifacts attributable to the at least one filter removed.

25. (Original) A radiation emitting imaging system comprising:

a scanning bay configured to position a subject to be scanned in a path of radiation;

a radiation projection source configured to project radiation toward the subject;

a radiation filter having a variable attenuation profile; and

a computer programmed to:

determine an attenuation pattern of the subject; and

modulate the variable attenuation profile of the radiation filter as a function of the attenuation pattern of the subject.

26. (Currently Amended) The radiation emitting imaging system of claim 25 wherein the computer is further programmed to:

modulate the variable attenuation profile of the radiation filter during radiation projection toward the subject; and

acquire imaging data of the subject and reconstruct at least one image therefrom.

27. (Original) The radiation emitting imaging system of claim 25 wherein the computer is further programmed to determine does reduction regions of the subject and further programmed to modulate the variable attenuation profile such that radiation exposure to the dose reduction regions is reduced.

28. (Original) The radiation emitting imaging system of claim 27 wherein the dose reduction regions include anatomical regions not to be imaged.

29. (Original) The radiation emitting imaging system of claim 25 wherein the computer is further programmed to modulate the variable attenuation pattern as a function of viewing angle.

30. (Original) The radiation emitting imaging system of claim 25 wherein the radiation filter includes a body of fillable hollow tubes and wherein the computer is further programmed to flood the hollow tubes with attenuating fluid to mirror the attenuation pattern of the subject.

31. (Original) The radiation emitting imaging system of claim 25 wherein the radiation filter includes a body of attenuating rods and wherein the computer is further programmed to manipulate the attenuating rods to mirror the attenuation pattern of the subject.

32. (Original) The radiation emitting imaging system of claim 25 wherein the radiation filter includes a body having an upper plate, a lower plate, a flexible bladder containing attenuating fluid disposed between the upper plate and the lower plate and wherein the computer is further programmed to modulate at least one of the upper plate and the lower plate to manipulate the attenuating fluid contained within the flexible bladder to mirror the attenuation pattern of the subject.

33. (Original) The radiation emitting imaging system of claim 32 wherein the upper plate includes a plurality of parallelly aligned slots and wherein the computer is further programmed to modulate the plurality of parallelly aligned slots to manipulate the attenuating fluid contained within the flexible bladder to mirror the attenuation pattern of the subject.

34. (Original) The radiation emitting imaging system of claim 25 wherein the computer is further programmed to initiate a scout scan of the subject and determine the attenuation pattern of the subject therefrom.

35. (Original) The radiation emitting imaging system of claim 25 incorporated into a CT system.

36. (Original) A radiation emitting imaging system comprising:

a scanning bay;

a movable table configured to move a subject to be scanned fore and aft along a first direction within the scanning bay;

an x-ray projection source configured to project x-rays toward the subject;

a first attenuator configured to attenuate x-rays along a first axis and translatable in the first direction;

a second attenuator configured to attenuate x-rays along a second axis and translatable in the first direction;

a computer programmed to:

calibrate the first attenuator to have a desired attenuation profile;

calibrate the second attenuator to have a desired attenuation profile;

move the subject along the first direction;

simultaneously therewith, translate at least one of the first attenuator and the second attenuator in the first direction.

37. (Original) The radiation emitting imaging system of claim 36 wherein the computer is further programmed to determine an attenuation pattern of the subject and calibrate the attenuation profiles of the first attenuator and the second attenuator as a function of the attenuation pattern of the subject during translation of at least one of the first attenuator and the second attenuator in the first direction.

38. (Original) The radiation emitting imaging system of claim 37 where the computer is further programmed to determine the attenuation pattern of the subject from a scout scan.

39. (Original) The radiation emitting imaging system of claim 36 wherein the computer is further programmed to determine dose reduction regions of the subject and further programmed to modulate the variable attenuation profile such that radiation exposure to the dose reduction regions is reduced.

40. (Original) The radiation emitting imaging system of claim 39 wherein the computer is further programmed to modulate the variable attenuation pattern as a function of viewing angle.

41. (Original) A computer readable storage medium having stored thereon a computer program and representing a set of instructions that when executed by a computer causes the computer to:

move a subject to be scanned into a scan position;

determine an attenuation pattern of the subject;

manipulate an attenuation profile of a filter configured to filter x-rays projected toward the subject; and

acquire imaging data of the subject and reconstruct at least one image therefrom.

42. (Original) The computer readable storage medium of claim 41 wherein the set of instructions further causes the computer to manipulate the attenuation profile of the filter during x-ray projection.

43. (Original) The computer readable storage medium of claim 41 wherein the set of instructions further causes the computer to manipulate the attenuation pattern and reduce x-ray exposure to dose reduction regions of the subject.

44. (Original) The computer readable storage medium of claim 43 wherein the set of instructions further causes the computer to modulate the variable attenuation pattern as a function of viewing angle.

45. (Original) The computer readable storage medium of claim 41 wherein the filter includes a body of fillable hollow tubes and wherein the computer is further programmed to flood the hollow tubes with attenuating fluid to mirror the attenuation pattern of the subject.

46. (Original) The computer readable storage medium of claim 41 wherein the filter includes a body of attenuating rods and wherein the computer is further programmed to manipulate the attenuating rods as a function of the attenuation pattern of the subject.

47. (Original) The computer readable storage medium of claim 41 wherein the filter includes a body having an upper plate, a lower plate, a flexible bladder containing attenuating fluid disposed between the upper plate and the lower plate and wherein the computer is further programmed to modulate at least one of the upper plate and the lower plate to manipulate the attenuating fluid contained within the flexible bladder as a function of the attenuation pattern of the subject.

48. (Original) The computer readable storage medium of claim 47 wherein the filter includes a plurality of parallelly aligned slots and wherein the computer is further programmed to modulate the plurality of parallelly aligned slots to manipulate the attenuating fluid contained within the flexible bladder as a function of the attenuation pattern of the subject.

49-55. (Canceled)